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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/853,262
Filing Date.	May 11, 2001
Patent No.	7,107,008
Issue Date	September 12, 2006
First Named Inventor	Luc Wuidart
Art Unit	2682
Examiner Name	Tuan A. Tran
Total Number of Pages in This Submission	
Attorney Docket Number	S1022.80664US00

ENCLOSURES (*Check all that apply*)

- [ ] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [x] Request for Certificate of Correction
- [x] Certificate of Correction
- [x] Copy of Page 7 Application as Filed
- [x] Copy of Column 5 of U.S. Patent No. 7,107,008
- [ ] Reply to Missing Parts/ Incomplete Application
  - [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
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- [ ] CD, Number of CD(s) _____
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- [ ] After Allowance Communication to TC
- [ ] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) (please Identify below):

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SEP 20 2006

of Correction

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	WOLF, GREENFIELD & SACKS, P.C.		
Signature			
Printed name	James H. Morris		
Date	September 15, 2006	Reg. No.	34,681

Certificate of Mailing Under 37 CFR 1.8(a)

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Dated: September 15, 2006

Signature: Gail Driscoll (Gail Driscoll)

O I P E IAP4
SEP 16 2006
PATENT & TRADEMARK OFFICE

Docket No.: S1022.80664US00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Luc Wuidart	
Serial No.:	09/853,262	Patent No. 7,107,008
Filed:	May 11, 2001	Issued: September 12, 2006
For:	VALIDATION OF THE PRESENCE OF AN ELECTROMAGNETIC TRANSPONDER IN THE FIELD OF A PHASE DEMODULATION READER	
Examiner:	Tuan A. Tran	
Art Unit:	2682	Confirmation No. 5046

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Dated: September 15, 2006

Gail Driscoll

REQUEST FOR CERTIFICATE OF CORRECTION PURSUANT TO 37 CFR 1.322

Attention: Certificate of Correction Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Upon reviewing the above-identified patent, Patentee noted typographical errors which should be corrected.

In the Specification:

The two equations found in column 5, lines 15 and 25 of U.S. Patent No. 7,107,008 are reproduced below.

$$C1_f = \frac{C1_{off-load}}{1-k_{\max}};$$

$$Cl_f = \frac{Cl_{off-load}}{1+k_{max}},$$

The equations, found on page 7 of the application as filed, should read as shown below:

$$Cl_f = \frac{Cl_{off-load}}{1-k_{max}^{\ 2}};$$

$$Cl_f = \frac{Cl_{off-load}}{1+k_{max}^{\ 2}},$$

No amendment was made by either Patentee or the Examiner to remove the "^{2}" from the equations. Accordingly, Patentee respectfully requests that a Certificate of Correction be granted make these corrections.

In support of this request Patentee encloses a copy of page 7 of the application as filed as well as column 5 of U.S. Patent No. 7,107,008.

Patentee respectfully submits that, since the errors for which a Certificate of Correction is sought were the result of Patent Office mistake, no fee is due. However, if the Examiner deems a fee necessary, the fee may be charged to the account of the undersigned, Deposit Account No. 23/2825.

Transmitted herewith is a proposed Certificate of Correction effecting such amendment. Patentee respectfully solicits the granting of the requested Certificate of Correction.

Dated: September 15, 2006

Respectfully submitted,

By: _____

James H. Morris
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OIPE IAP4 SEP 18 2006 PATENT & TRADEMARK OFFICE

proportionality coefficient which:

a') if the present imaginary part is negative, is greater than one; and

b') if the present imaginary part is positive, is smaller than one.

According to an embodiment of the present invention, the method includes selecting a forcing value $C1_f$ which:

a') if the present imaginary part is negative, respects the following relation:

$$C1_f = \frac{C1_{off-load}}{1-k_{max}^2}; \text{ and}$$

b') if the present imaginary part is positive, respects the following relation:

$$C1_f = \frac{C1_{off-load}}{1+k_{max}^2},$$

where $C1_{off-load}$ represents the off-load capacitance of the setting element and where k_{max} represents the maximum coupling coefficient between the transponder and the terminal.

The foregoing objects, features and advantages of the present invention, will be discussed in detail in the following non-limiting description of specific embodiments in connection with the accompanying drawings.

Brief Description Of The Drawings

Fig. 1 very schematically shows a conventional example of an electromagnetic transponder system;

Fig. 2 shows, in the form of a simplified flowchart, an embodiment of the method for validating the presence of a transponder according to the present invention;

Fig. 3 partially and schematically shows an embodiment of a phase demodulation read/write terminal according to the present invention;

Fig. 4 illustrates, in the form of a flowchart, a mode of implementation of the validation method of the present invention; and

Fig. 5 shows examples of the shape of the amplitude of the phase variation available at the input of the phase demodulator of a read/write terminal according to the capacitance of the oscillating circuit of a transponder having entered the field of this terminal.

According to an embodiment of the present invention, the method includes, in case b, of selecting a forcing value depending on the off-load value of the setting element with a proportionality coefficient which:

a') if the present imaginary part is negative, is greater than one; and

b') if the present imaginary part is positive, is smaller than one.

According to an embodiment of the present invention, the method includes selecting a forcing value $C1_f$ which:

a') if the present imaginary part is negative, respects the following relation:

$$C1_f = \frac{C1_{off\text{-}load}}{1 - k_{max}};$$

and

b') if the present imaginary part is positive, respects the following relation:

$$C1_f = \frac{C1_{off\text{-}load}}{1 - k_{max}},$$

where $C1_{off\text{-}load}$ represents the off-load capacitance of the setting element and where k_{max} represents the maximum coupling coefficient between the transponder and the terminal.

The foregoing objects, features and advantages of the present invention, will be discussed in detail in the following non-limiting description of specific embodiments in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** very schematically shows a conventional example of an electromagnetic transponder system;

FIG. **2** shows, in the form of a simplified flowchart, an embodiment of the method for validating the presence of a transponder according to the present invention;

FIG. **3** partially and schematically shows an embodiment of a phase demodulation read/write terminal according to the present invention;

FIG. **4** illustrates, in the form of a flowchart, a mode of implementation of the validation method of the present invention; and

FIG. **5** shows examples of the shape of the amplitude of the phase variation available at the input of the phase demodulator of a read/write terminal according to the capacitance of the oscillating circuit of a transponder having entered the field of this terminal.

DETAILED DESCRIPTION

The same elements have been referred to with the same references in the different drawings. For clarity, only those elements of a terminal and of a transponder and only those steps of the information exchange process which are necessary to the understanding of the present invention have been illustrated in the drawings and will be described hereafter. In particular, the details constitutive of the modulators and demodulators have not been detailed and are within the abilities of those skilled in the art based on the functional indications given hereafter. Further, the present invention will be discussed in relation with transponders using a so-called "resistive" back-modulation to vary the load that they form on the terminal's oscillating circuit (the capacitances of the oscillating circuits of the transponders being fixed), but it should be noted that the present invention more generally applies to any type of back-modulation, for example to a so-called "capacitive" back-modulation.

A feature of the present invention is to provide a direct determination of the presence of a transponder in the field of a read/write terminal, that is, without it being necessary to interpret demodulated data transmission signals coming from the transponder. More specifically, the present invention provides, in case of an absence of a demodulated signal usable by the terminal, validating the absence of a transponder in the field thereof by another determination independent from the existence of a data transmission.

Another feature of the present invention is to provide, in case of an incoherence between the result of the demodulator and of the direct determination, a corrective action enabling the terminal's demodulator to correctly interpret the received data. This corrective action is preferentially performed on the terminal's oscillating circuit and, preferably, on the capacitive element of this circuit.

The determination of the presence or the absence of a transponder in the terminal's field is performed, according to the present invention, by a measurement of the current in the terminal's oscillating circuit and of the voltage across its capacitive element (or of variables directly linked to the current and to the voltage), and by comparing the obtained current values with previously-stored values. The latter preferably correspond to values measured in a learning phase where the reader is in a specific configuration.

FIG. **2** is a simplified flowchart of a mode of implementation of a sequence of validation of the presence of a transponder in the terminal's field, applied to the stand-by state of a read/write terminal.

As soon as it is powered on and in operation, a transponder read/write terminal begins (block **20**, ST), after a starting, set and test phase, a stand-by procedure during which it waits for a communication with a transponder to be established. This procedure includes sending (block **21**) a request sequence (REQ) to the possible transponder(s) present in the terminal's field. After each sending of an interrogation request **21**, the reader monitors (block **22**) the reception, by its demodulator, of an acknowledgement message (ACK) coming from a transponder having entered its field.

In a conventional method (not shown), in the absence of an acknowledgement, the reader loops on the sending of a request **21**. When its receives an acknowledgement ACK, it switches to a mode of checking whether the transponder really is a transponder intended therefor, as well as to a possible anti-collision mode (block **23**, INIT/COM) to individualize several transponders that may be present in the field. Indeed, as a response to an interrogation request by a terminal, if several transponders are present in the field thereof, they may respond at the same time or with a sufficiently low time interval to make the result of the demodulation by the reader unexploitable. Said reader must then either select a transponder with which it wishes to communicate, or assign different channels to the different transponders.

A communication only starts when the initialization and anti-collision process illustrated in FIG. **2** by block **23** is over. As soon as a given transponder has been properly identified, it is placed in a state where it no longer acknowledges interrogation requests to avoid polluting the detection of the other possible transponders.

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,107,008

APPLICATION NO. : 09/853,262

ISSUE DATE : September 12, 2006

INVENTOR(S) : Luc Wuidart

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 5, lines 15 – 25 should read as shown below:

$$Cl_f = \frac{Cl_{off-load}}{1 - k_{max}^2}$$; and

b') if the present imaginary part is positive, respects the following relation:

$$Cl_f = \frac{Cl_{off-load}}{1 + k_{max}^2}$$,

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